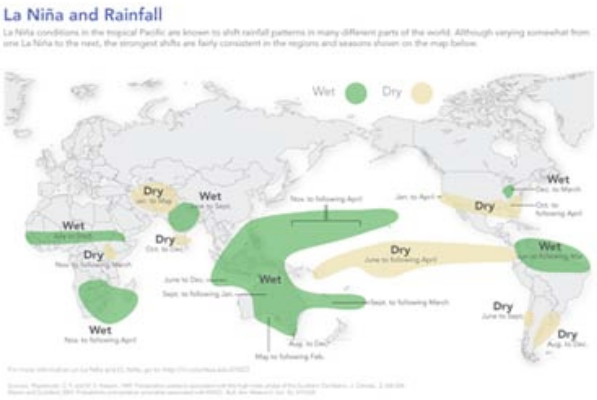
Climate Information for Public Health Action (CIPHA)

Summer Institute

News from the Ground

February 2011

Vol. 3 Issue 2



La Niña and Rainfall. For high res PDF (3.2mb)

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This newsletter provides updates on the latest developments within the CIPHA network, including the activities of alumni and facilitators, brief meeting reports, news from the health and climate community, and opportunities for collaboration.

From the Editors

Many of you are aware of the devastating floods that have occurred in different parts of the world, and that climate scientists say are associated with the La Niña phenomena.

IRI Scientists have predicted that moderate-to-strong La Niña conditions will continue to exist in the tropical Pacific potentially causing additional shifts in rainfall patterns across many parts of the world in the months ahead. These shifts, combined with social and infrastructural vulnerability, make some parts of the world at risk of both local and large scale disasters. However, La Niña conditions do allow the IRI and other institutions to produce more accurate seasonal forecasts and help better predict extreme seasonal drought or rainfall in some parts of the world

http://iri.columbia.edu/features/2011/la_nina_related_impacts_likely_to_continue.html

Drought and flood disasters have both major economic and public health outcomes. Newspaper reports indicate many lives lost as a direct consequence of the landslides in Brazil and floods in Sri Lanka and Australia (35 deaths), but other indirect health consequences can also be expected including water'-borne and vector-borne diseases and mental health problems (such as depression) resulting from the loss of loved ones, livelihoods and a sense of personal and community security (http://tinyurl.com/48s7nke).

Climate services, pertinent to the prevention and control of negative health outcomes associated with extreme events are being developed and should increase the availability of relevant quality-controlled climate data for improving emergency prevention and response decisions. As a consequence the Summer Institute Curriculum is being further developed so that health practitioners can make full use of existing climate information in prevention and response to the health impacts of hydro-meteorological extreme events. In addition, by increasing their dialogue with climate information providers they can help ensure the relevance of new products and services that are tailored to their needs.

To address some of these challenges, the Kenya and Tanzania Red Cross National Societies are implementing a 2.5 year operational research project supported by a grant from the Rockefeller Foundation. The project is coordinated by the Red Cross Red Crescent Climate Centre and the

Columbia University Centre for Research on Environmental Decisions. The aim of the project is to establish a community- based early warning system for extreme rainfall which would allow for actions such as prepositioning of water purification equipment and the mobilization of volunteers to prepare the community.

For an example of how climate information has been used successfully by the Red Cross, in collaboration with IRI, please see: http://tinyurl.com/4agrfez

Updates

Alumni

SI 08 alumna Michelle Stanton, currently a doctoral candidate in the Division of Medicine at Lancaster University. UK. Michelle joined the IRI climate and public health team in January 2011. Her academic supervisor, Professor Peter Diggle and his team at Lancaster University are working at the forefront of space-time statistical modeling. Currently an adjunct Senior Research Scientist at the IRI, Diggle is collaborating with the IRI on the creation of probabilistic predictive models around specific decision-thresholds, including through the recently funded UK Medical Research Council project "Statistical modeling for real-time spatial surveillance and forecasting".

Michelle's visit is part of this collaboration, which is designed to support the Meningitis Environmental Risk Information Technologies (MERIT) Initiative. During her stay, Michelle will be working closely with Drs. Carlos Perez and Sylwia Trzaska on the incorporation of environmental data into statistical models of meningococcal meningitis in the Sahel region.

SI 08 alumna Wendy Marie Thomas is a staff member at the AMS. For the second time in the row, she coordinated the Environment and Health Symposium at the 91st Annual AMS Meeting which was held in Seattle, WA last January. The symposium focused on the communication aspects for the research, outreach, and policy issues regarding the hybrid science of environment and health.

The sessions covered two full days and feature speakers from medical, public health, and hydro-meteorology (including oceans) disciplines. Among them were two IRI speakers, **Dr. Gilma Mantilla** and **Dr. Bradfield Lyon**. Gilma informed the hydro-meteorological community about IRI's initiative called "Climate Information for Public Health: towards a knowledge system". Read the abstract here. Bradfield's talk entitled "Assessing the regional characteristics of heat waves in the U.S." was particularly valuable to atmospheric modelers who can help forecasting these potentially devastating events. The meeting proceedings will be available in March 2011, and interested viewers should contact Wendy Marie at wthomas@ametsoc.org for more information.



SI08 alumnae MIchelle, Wendy and Laurence. *J.Rodriguez, IRI*

SI 08 alumna Laurence Cibrelus attended the 4th MERIT Technical Meeting, held in Addis Ababa, Ethiopia in November 10 (see" Ethiopia Climate and Health Working Group" below). There, on behalf of the Climate and Health Working Group of Madagascar, Laurence presented the lessons learned from the CIPH workshops held in Antananarivo in 2009 and 2010, in order to feed the discussions on the integration of research and operational climate and health activities at the national level that occurred during this meeting.

SI 09 alumna Rachel Lowe, Earth System Physics, Abdus Salam International Centre for Theoretical Physics (ICTP), Italy. Rachel recently defended her PhD thesis on spatio-temporal modelling of climate-sensitive disease risk at the

University of Exeter, UK. Rachel is now a visiting scientist at ICTP working on the EU FP7 project "Quantifying Weather and Climate Impacts on Health in Developing Countries" (QWeCI) with Adrian Tompkins, who co-authored the project with the University of Liverpool. The aim of her research is to develop and implement statistical and dynamical models to predict malaria risk in Malawi driven by state-of-the-art climate forecasts and other factors that influence the disease. During a recent field visit to Malawi in November 2010, links were established with the Malawi Ministry of Health, the National Malaria Program and Meteorological Services. The collaboration will involve the exchange of spatio-temporal disease, climate and socio-economic datasets, the invitation of Malawi scientists to ICTP for training purposes and knowledge exchange, and the development of sophisticated tools to contribute to an integrated climate based epidemic early warning system for Malawi. More information available at:
http://tinyurl.com/46tgape

SI10 alumnus Moussa Mouhaimouni, head of climatological analysis, at the National Meteorological Services of the Republic of Niger, was invited by Jean François Jusot, the head of the epidemiological unit of CERMES, to participate in a training workshop on "Methods of spatiotemporal analysis of exposure and health data" at the beginning of December 2010. A total of fourteen (14) persons, who were epidemiologists, climatologists, biologists and experts on SIG from West Africa (Burkina Faso, Mali, Niger, and Senegal), North Africa (Morocco, Algeria) and France, attended the course. This workshop was facilitated by Pierre GOOVAERTS, Chief scientist at BioMedware Inc. and Courtesy Associate Professor at the University of Florida. For more information, please contact Moussa at: mouh_moussa@yahoo.fr

SI10 alumnus Ramesh Dhiman from National Institute of Malaria Research (ICMR), New Delhi steered the study entitled "Climate Change and India: A 4x4 Assessment, A Sectoral and Regional analysis for 2030s". Some results of this study were shared on 16th November 2010 in New Delhi under the aegis of Indian Network of Climate Change Assessment (INCCA). The findings of transmission windows of malaria based on minimum temperature and relative humidity reveal that the Himalayan region is likely to develop new windows of transmission. It also suggests that the intensity of malaria transmission is projected to increase in northeastern states. More information about the study at: http://moef.nic.in/index.php

Ethiopia Climate and Health Working Group

In collaboration with the School of Public Health, Addis Ababa University, and the IRI, Columbia University, the Ethiopian CHWG organized a half day **National Seminar on Public Health and Climate**, prior to the beginning of the 4ht MERIT Technical Meeting.

The seminar was held so as to inform the academic community and students on the issue of climate and health , to enable exploring research areas on this topic as well as to introduce the MERIT initiative. Managing climate related health risks with a focus on lessons learned was the highlight of the seminar. A dedicated presentation on behalf of the National Meteorological Agency (NMA) regarding institutional and human capacity building for provision of better climate products and services for users was also made. Staff and students from the School of Public Health, participants from Ethiopian Health and Nutrition Research Institute, College of Natural Sciences, Addis Ababa University attended the seminar. The Dean of the School of Public Health officially opened the seminar and stressed on the need for capacity building. The panelists included speakers from IRI, Ethiopian Health and Nutrition Research Institute, NMA and WHO.

Further, the Climate and Health Working Group/Anti-Malaria Association in collaboration with MERIT Steering Committee hosted the **4th International Merit Technical Meeting** at Addis Ababa from 18-20 Nov. 2010, held at the United Nations Economic Commission for Africa(UNECA). The venue for the 5th MERIT Meeting was also set to be in Nigeria. About 73 participants drawn from the health, climate and research, communities, as well as members of the MERIT-Ethiopia case study, attended the meeting, originating from the US, Europe and Africa. The meeting was funded by the IRI, the Health and Climate Foundation, the WHO and the Group on Earth Observations. A report of the meeting is prepared and will be shortly available for the Web-page of the Health and Climate Foundation. For more information, see:
http://merit.hc-foundation.org/eventpage.html

Facilitators



Judy Omumbo at a malaria training workshop in Addis Ababa *(Source: IRI)*

The Ethiopian CHWG, in collaboration with IRI, organized a **workshop on malaria and climate last November** in Addis Ababa. The workshop was designed with a hands-on approach to analyze malaria and climate datasets to explore the associations between climate variability and malaria trends in Ethiopia between 2004 and 2009. Participants from Regional Health Bureaus, the NMA, the School of Public Health, the Field Epidemiology and Laboratory Training Program (FELTP), and the Aklilu Lemma Institute of Pathobiology, Addis Ababa University, attended the workshop. The workshop was facilitated by IRI J**ohn del Corral , Judy Omumbo and Madeleine Thomson (SI 08 10 Facilitators)** IRI. Participants were introduced to mapping tools available in the IRI Data Library and undertook exercises in analysis and interpretations for discussion. The workshop was funded by the IRI.

SI 08-10 Gilma Mantilla spoke at the Environment and Health Symposium's session on "Shifting the Paradigm: Communication Frameworks that Strengthen our Public Health Partnerships" event which was part of the American Meteorological Society annual meeting (23 - 27 January, Seattle, WA). Gilma's topic was "IRI Climate Information for Public Health: towards a knowledge system" (Mantilla, G., M. Thomson, and S. J. Connor). Read the abstract here.

Gilma was also an invited speaker on "Climate Information for Public Health: Curriculum for Best Practices" at a workshop designed for Field Epidemiology Training Program Directors, held in Cape Town, South Africa last December 12th. The workshop preceded TEPHINET's (Training Programs in Epidemiology and Public Health Interventions Network) Sixth Global Scientific Conference–organized in collaboration with South Africa's Field Epidemiology and Laboratory Training Programme, Africa's Field Epidemiology Network, and Centers for Diseases Control and Prevention (CDC)'s Center for Global Health. Gilma's participation in the workshop was an opportunity to discuss collaborative activities exploring the incorporation of IRI's climate information for public health curriculum with TEPHINET's curriculum for its partners in Africa and the Americas.

Interview



Yves Tourre (YT), Adjunct Senior Research Scientist at the Lamont-Doherty Earth Observatory (LDEO)/ the Earth Institute at Columbia University, visited the IRI in 2010 and was interviewed by Francesco Fiondella (FF), communication officer at the IRI.

FF: **Can you tell me, what your role was at IRI when you were here?**

YT: I'm one of the pioneers of the IRI. I was the first Director of Training and Education and my mission was to put together workshops all around the world to train people on climate issues, but also to see how those climate issues could be applied to society and to get feedback from different institutions.

I started with a workshop in Queensland, Australia on climate and agriculture, [an] international workshop. That was a 3-week workshop with about 25 trainees and 15 experts. After that, we had the workshop on **Climate and Health, which was** in, Bamako, Mali. Same format: 3 weeks, 20 trainees and

15 experts. It was a difficult one because you have to recall that was 11 years ago, and the linkages between, we knew there were linkages between vegetation and vector-borne disease, and this and that, but we were not putting all aspects of climate into the game. Finally, we put together another workshop, on climate and global fisheries, and that was in New Caledonia, same format. From that workshop came up a very important paper, which was [on] the multi-decadal variability of climate and so-called "fish synchrony".

FF: **Looking back to the health workshop, the trainees, they were participants in the workshop. They were already health professionals?**

YT: Well, some were professionals from South Africa, East Africa and the Sahel involved with endemic malaria, but some were getting involved in studying health issues.

FF: I want to sort of let readers understand why this climate and health workshop was so important to have, and to have it in Africa. And the follow-up would be what do you think were the main outcomes of that workshop then, you know, in the immediate aftermath, but then also looking at it years later?

YI: Well, part of the workshop was to expose people from the climate discipline to health and vice-versa, we were trying to have the people from the health sector to understand what is climate, what are all the different time-scales of climate variability including trends from climate change. And having said that, how could we get into the early warning system component of activity by linking the two and help local managers, decision-makers or stake-holders to make sense from the climate products which we've got on the desk? And how can they make decisions and disseminate, you know, those decisions to the public at-large in order to mitigate the effects of upcoming diseases or infectious diseases and so forth?

We learned that in some places in Africa, monitoring the environment using NDVI as an indicator can help to understand that the mechanisms of transmission are different, even if you were dealing with the same infectious disease, like malaria or Rift Valley fever ….

We also understood that things were extremely complex in function, what was the background in which country you'll be dealing with, and so forth. The two vectors for the Rift Valley fever came from went across Africa. At that time, in Senegal, we were not talking too much about Rift Valley fever while as of today, it's there. So the mosquitoes, the two species, actually moved westward and now they're in Senegal and southern Mauritania. And they're found a different environment, and they've found a way of competing.

So these are things we learn by going through the workshops, and obviously, in the last 10 years, we've tried to improve the knowledge of, get some more information on the physical mechanisms involved, so we could get better products and better information which could be passed on to decision-makers.

FF: Can you think of just one example how the information or product has gotten better?

YT: A lot of the progress in the last 10 years has been done on seasonal forecast, the downscaling aspect, the remote-sensing aspect., but I will talked about the Rift Valley fever, because I've been involved with the Senegalese and the local people on that particular infectious disease. Using remote sensing, we were able to map from space using high resolution data, (10 meter pixels in infrared, or 2.5 meter pixels in visible), the clusters of ponds. We could see the differences between the ponds were being organized as a function of the eco-zones: sandy, sandy clay, peanut fields, and agriculture. It's amazing how we, from space, how we could get the pictures; that was done for the first time! Before, we thought that one pond was enough, but we learned that one big pond can have the same effect as a cluster of small ponds, and [be] equal in terms of producing mosquitoes, and that's something we didn't know before.

FF: **What are the next steps?**

After those workshops and from we have learned, what we're trying to do now, is to have conferences 10 to 11 years later, to share success stories with the stakeholders, the decision-makers, because they have to listen what has been done so far and how they can start playing a role in this game.

Upcoming Training Courses

Building Resilience to Climate Change. Tokyo, Japan. 28 February - 25 March 2011

The United Nations University Institute for Sustainability and Peace (UNU-ISP), Tokyo, invites applications for the new intensive 4-week postgraduate programme on "Building Resilience to Climate Change" developed under the framework of the University Network for Climate and Ecosystems Change Adaptation Research (UN-CECAR).

For detailed information on the application and admission procedures, and to download the application form, please visit the UNU-ISP website at: http://isp.unu.edu/cecar.

Summer Colloquium on Statistical Assessment of Extreme Weather Phenomena under Climate Change. Boulder, Colorado. 6-24 June 2011

This three-week colloquium will be held at the National Center of Atmospheric Research in Boulder, Colorado, USA. Its goal is to training in the use of extreme value analysis to assess how frequency, duration, and intensity of extreme weather events could shift as part of global climate change. More information available from: http://www.asp.ucar.edu/colloquium/summer_colloquiua.php

10th International NCCR Climate Summer School "Climate Change, Extremes and Ecosystem Services". Grindelwald, Switzerland. 4 - 9 September 2011

The course will cover a broad spectrum of climate and climate impact research issues and foster cross-disciplinary links. Each topic includes keynote plenary lectures and workshops with in-depth discussion in smaller groups. All summer school participants present a poster of their research and there will be ample opportunity for discussion.

The Summer School is open to young researchers (PhD students and Post-Docs) worldwide. More information available from : http://www.nccr-climate.unibe.ch/summer_school/2011/

Climate Change and Development. International Development, University of East Anglia, Norwich, UK. 31 August - 13 September 2011

This course is designed for people who want to gain a greater understanding of the implications of climate change for developing countries and of the processes, issues and debates surrounding adaptation and mitigation. It is aimed particularly at building the knowledge base of professional staff from government agencies and NGOs who do not have existing specialism in the field but who may have new responsibility or interest in the integration of climate change management into development planning, projects and policy. To ensure participants have a full grounding in climate change issues the course incorporates expert sessions on climate science, climate change mitigation and international mechanisms/negotiations relating to climate change. Key emphasis is then placed on vulnerability and adaptation in the context of poverty reduction - exploring what climate change implies in terms of impacts and vulnerability in developing countries, and how to go about building resilience and adaptive capacity at all scales. More information available online at: www.uea.ac.uk/dev/co/prodev

PhD Studentships in Quantitative Social Science and Social Statistics. Lancaster University, UK. October 11 , 2011

Lancaster, Liverpool and Manchester Universities have been jointly awarded an ESRC Doctoral Training Centre through which 63 studentships are available, for students beginning their PhD training in October 2011

Lancaster has exceptional strength in quantitative methods for the social sciences, which is primarily based in the Department of Mathematics and Statistics or in the School of Health and Medicine .Up to four of these studentships are available at Lancaster for PhD projects in Quantitative Methods, and are open to candidates of any nationality.

Please send applications to:

Angela Mercer, Department of Maths and Statistics, Fylde College, Lancaster University, Lancaster LA1 4YF, UK

Informal inquiries about these studentships are encouraged by e-mail to either Brian Francis (b.Francis-at-Lancaster.ac.uk) or Peter Diggle (p.Diggle-at-Lancaster.ac.uk)

Upcoming Events

Africa Adapt Climate Change Symposium 2011: Linking Climate Research, Policy and Practice for African-led Development. Addis Ababa, Ethiopia. 9-11 March 2011.

This landmark event is Africa-focused and free to attend. The three-day bilingual (French/English) symposium explores evolving approaches, tools, methods and philosophies exploring links between the changing climate and sustainable development across Africa.

Visit www.adaptation2011.net to find out how AfricaAdapt can help with your participation costs.

Fostering Advances in Interdisciplinary Climate Science. AAAS, Washington, D.C. March 31-April 2, 2011

This meeting will provide a forum for addressing the following questions: How are high-quality interdisciplinary scientific ideas best recognized and nurtured in their nascent phase? How can we improve this recognition process so as to better support interdisciplinary climate science advances? The event will examine the history of successful, innovative interdisciplinary scientific advances, drawing on experience not only in climate science but also in other fields. More information available from:
www.nasonline.org/Sackler_climate_science

Climate and Health in Africa: Ten Years On. Addis Abba, Ethiopia, UNECA. April 4-6, 2011

The CHWG in collaboration with a steering committee (African Climate Policy Center, WHO, UNDP, the UK Met Office, Exeter University and the IRI) are organizing an interdisciplinary workshop on "Climate and health in Africa: 10 years on" The '10 Years On' workshop will be a valuable opportunity for various groups to discuss the lessons and results of initiatives over the past decade and it will provide an opportunity to draft the 'Road Map' for next steps and to outline targeted new initiatives required for the next 10 years moving forward. In our next issue we will bring you a brief update on what happened in this important gathering.

XV Brazilian Symposium on Remote Sensing. Curitiba, Brazil. April 30 to May 5, 2011

The event will offers opportunities for dissemination of technical and scientific works in the area of remote sensing, exchange of experiences among professionals, expanding the knowledge of the application of remote sensing technologies and GIS, fostering inter-institutional cooperation, and the fostering of private sector this sector.

More information available from:
http://www.dsr.inpe.br/sbsr2011

Climate Research in Service to Society. Denver, CO, USA. 24-28 October 2011

The WCRP OSC represents an exclusive opportunity to assemble the international scientific community working to advance understanding and prediction of variability and change of the Earth's physical climate system on all space and time scales. The OSC will facilitate cross-fertilization across the diverse research communities within the WCRP, as well as with other international research programmes, including the International Geosphere-Biosphere Programme (IGBP), the World Weather Research Programme (WWRP) and the Earth System Science Partnership (ESSP).

The OSC will appraise the current state of climate science, thereby making a measurable contribution on the Fifth Assessment Report (AR5) of the Intergovernmental Panel on Climate Change (IPCC). It will identify key opportunities and challenges in observations, modeling, analysis and process research required to understand and predict responses of the Earth as a system.

By entraining as many young scientists and students as possible from across the world, including less-developed and developing countries, the OSC will facilitate growth of the diverse future workforce needed to meet the increasingly complex scientific challenges of the future.

More information available online at:
http://www.wcrp-climate.org/conference2011/

Recent Publications

Health and Climate – Needs. S.J. Connor, J. Omumbo, C. Green, J. DaSilva, G. Mantilla, C. Delacollette, S. Hales, D. Rogers and M. Thomson. *Procedia Environmental Sciences, Volume 1, 2010, Pages 27-36*

This paper describes the needs for climate risk management and information services for the health sector to serve research, educational and operational needs of ministries of health and their partners, those agencies that support broader public health service provision as well as respond to epidemics and emergencies. While climate information is considered highly relevant to helping guide improvements in public health provision, to date this information is largely underutilized. We explore some of the gaps in satisfying these needs, and we make recommendations to help fill the identified gaps.

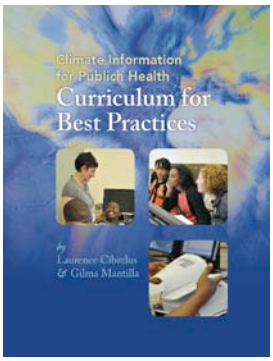
Available online at:
http://www.sciencedirect.com/science/journal/18780296

Raised temperatures over the Kericho tea estates: revisiting the climate in the East African highlands malaria debate . Omumbo JA, Lyon B, Waweru SM , Connor SJ, Thomson MC. *Malaria Journal* 2011, **10:**12doi:10.1186/1475-2875-10-12

This study presents evidence of a warming trend in observed maximum, minimum and mean temperatures at Kericho during the period 1979 to 2009 using gold standard meteorological observations. Although local factors may be contributing to these trends, the findings are consistent with variability and trends that have occurred in correlated global climate processes. Climate should therefore not be dismissed as a potential driver of observed increases in malaria seen in the region during recent decades, however its relative importance compared to other factors needs further elaboration.

Article available online at:
http://www.malariajournal.com/content/10/1/12

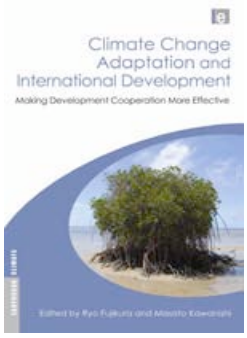
Climate Information for Public Health. Curriculum for Best Practices. Putting Principles to Work. Cibrelus L, and Mantilla G. 2010



The core curriculum on Climate Information for Public Health (CIPH) was designed, to offer public health decision makers and their partners the opportunity to learn practical methods for integrating climate knowledge into decision making processes through expert lectures, focused discussions and practical exercises. The core curriculum aligns very closely with that of the Field Epidemiology Training Programs (FETP) implemented by several Ministries of Health across the globe and is intended to be complementary to many courses and programs already developed by the Public Health, Environmental and Sustainable Development Departments of numerous universities worldwide.

Available online at:
http://iri.columbia.edu/publications/id=1044

Climate Change Adaptation and International Development: Making Development Cooperation More Effective. Edited By Ryo Fujikura and Masato Kawanishi



This book examines climate change adaptation from the perspective of development cooperation in order to provide useful lessons for those engaged in research, policy and practice in this vital area. The editors have brought together a wide range of case studies from across Africa and Asia to examine climate change projections, social, economic and environmental impact and vulnerability assessment and adaptation as well as cases across Africa for which climate data is less readily available

and alternative approaches need to be adopted. The current situation amongst international donors and emerging issues caused by climate change are also explored.

More information available from:
http://www.earthscan.co.uk/?tabid=102462

Implications of climate change for health in Africa. Editor: Moses J.Chimbari, University of Botswana ,2010



Climate change affect human health directly as the changing weather patterns encourage the production of disease vectors and parasites such as those causing malaria. Indirect changes will result through impacts on water availability, air quality, food quality and quantity, ecosystems, agriculture and economies –all factors that affect people's health. This issue features articles from different countries which highlight ongoing or completed research into climate change and health across Africa.

Available online at
http://www.alin.or.ke/Joto%20Afrika

Related Links

http://portal.iri.columbia.edu/portal/server.pt

Contact Information

Please contact ciph@iri.columbia.edu to send your comments or materials to be included in the next CIPHA newsletter. **The deadline for documents to be included in the next issue is April 20th, 2011.**

If you have questions about IRI activities, please visit our Home Page:
http://portal.iri.columbia.edu/portal/server.pt

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